

Teltonika GSM Camera

SE2000

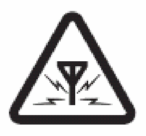
USER MANUAL v. 1.0

CONTENTS

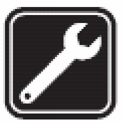
Safety instruction



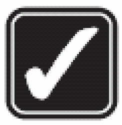
Do not rip the device. Do not touch the device if the device block is broken or its connecting wires are without isolation.



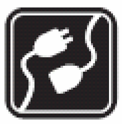
All wireless devices for data transferring may be susceptible to interference, which could affect performance.



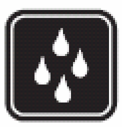
Only qualified personnel may install or repair this product



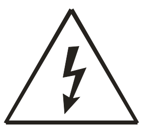
The device must be steadily fastened on the mounting place.



The device requires high ∼220V voltage.



The device is not water-resistant. Keep it dry.



Do not mount or serve device during a thunderbolt.

General safety requirements

In this document you will be introduced how to use the "Teltonika GSM Camera" device safely. You will avoid dangerous situations and harming of yourself if you stick to these recommendations. You have to be familiar with the safety requirements before starting using the device!

To avoid burning and voltage caused traumas, of the personnel working with device, please follow these safety requirements.

Installation and technical support of the device can be performed only by a qualified personnel or a person who has enough knowledge about this device and safety requirements.

The device requires 9V ⎓ power supply. The PC, to which the device "Teltonika GSM Camera" is to be connected must have a COM port applied to standards. Nominal power supply voltage is 9V ⎓. Available power supply source range is – 9V...24V ⎓, power up to 3 W.

The PC and power supply source, to which the device "Teltonika GSM Camera " is connected, should satisfy LST EN 60950 standard. The device "Teltonika GSM Camera" can be used on first (Personal Computer) or second (Notebook) computer safety class.

To avoid mechanical damage of the device, it is recommended to transport the device packed in damage-proof pack.

If the device starts working insufficiently only qualified personnel may repair this product. We recommend to dismantle the device and forward it to repair centre or to manufacturers. No exchangeable parts inside of the device.

1. General Information

1.1 Introduction

Teltonika GSM Camera – is a small, mobile video monitoring system that sends data through GSM GPRS/EDGE network.

System functions:

- Video monitoring from one or two points.
- Data transfer using GSM GPRS/EDGE network.
- Data sending to:
    - E-mail.
    - FTP server.
    - WEB server.
    - PC connected to the Internet ("Observation Post" software has to be with the static external IP).
    - Specified security central.
- Area listening.
- Automatic external light control.
- Users' authorization system.
- Programmable periodical filming.
- Programmable sensors system.

System external interface:

- Focusing mini lens.
- Two screws for mounting brackets.
- Power supply connection socket.
- External GSM antenna connection socket.
- SIM card slot.
- Additional port for external camera or PC.
- External sensor for photo function activation.
- External sensor to enable/disable photo function sensor.
- External light control scheme connection contacts.
- System status indication LED.
- Selected camera indication LED.

1.2 About the document

This document describes technical device connection, technical and software configuration of "Teltonika GSM Camera". This should help to install "Teltonika GSM Camera" and configure its system. The document describes mechanical, electrical, radio frequency, antenna, PC configuration and software installation. It is also described how to test and run "Teltonika GSM Camera" for the first time.

1.3 Legal Notice

Copyright © 2006 TELTONIKA Ltd.
All rights reserved. Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of TELTONIKA Ltd is prohibited.
Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

1.4 Acronyms

APN	Access Point Name
GPRS	General Packet Radio Service
GSM	Global System for Mobile communications
PIN	Personal Identification Number
SIM	Subscriber Identity Module
SMS	Short Message Service
EDGE	Enhanced Data rates for GSM Evolution.
WAP	Wireless Application Protocol
FTP	File Transfer Protocol
SMTP	Simple Mail Transfer Protocol
PHP	Hypertext Preprocessor
PC	Personal Computer
WEB	World Wide Web

2. Package contents

„Teltonika GSM Camera“ device is delivered to the client in cardboard box with all required supplements necessary for work. Package consists of:

1) Cardboard box.
2) “Teltonika GSM Camera“ device.
3) Power supply.
4) PC Cable.
5) GSM antenna.
6) Mounting bracket.
7) CD with software and User Manual.
8) Quick start guide.

Note: the manufacturer does not provide SIM card, which is necessary for connecting to the GSM network! SIM card can be obtained from your GSM operator!

If any of the components are missing, please contact your local distributor.

3. Device Description

3.1 Operating description

“Teltonika GSM Camera” is a remote control device that can be controlled and programmed by SMS commands. Full device programming can also be performed by Camera Configurator software. The only exception is SIM card PIN code entering which can be performed only by Camera Configurator (PUK code entering is not supported).

- ❖ When all parameters are set, camera starts taking and sending images if:
  - received a SMS command to take pictures;
  - received a SMS command to start video;
  - a periodic picture taking timing has started;
  - camera received short phone call from authorized number;
  - external sensor is activated.
- ❖ If the SIM card inserted into the camera receives a long phone call (longer than 10 seconds), system switches to area listening mode.
- ❖ For each SMS command sent from the authorized number, the system returns a message stating the performance or the error of the command.
- ❖ When the sensor activates, before starting taking photo, camera can send the warning SMS message to one or several users.
- ❖ The reaction to the sensors may be temporarily disabled by using camera on/off input. This will not influence camera’s reaction to the phone call or SMS messages.

- ❖ Connected external camera will be automatically recognized and set in the system. All video algorithms will be the same only this time camera will be making two pictures on each cycle.
- ❖ When a PC cable is connected to an external camera port, the camera switches to a programming mode and waits for the connection with Camera Configurator program. When the cable is unplugged, system restarts and starts operating corresponding to the new settings.

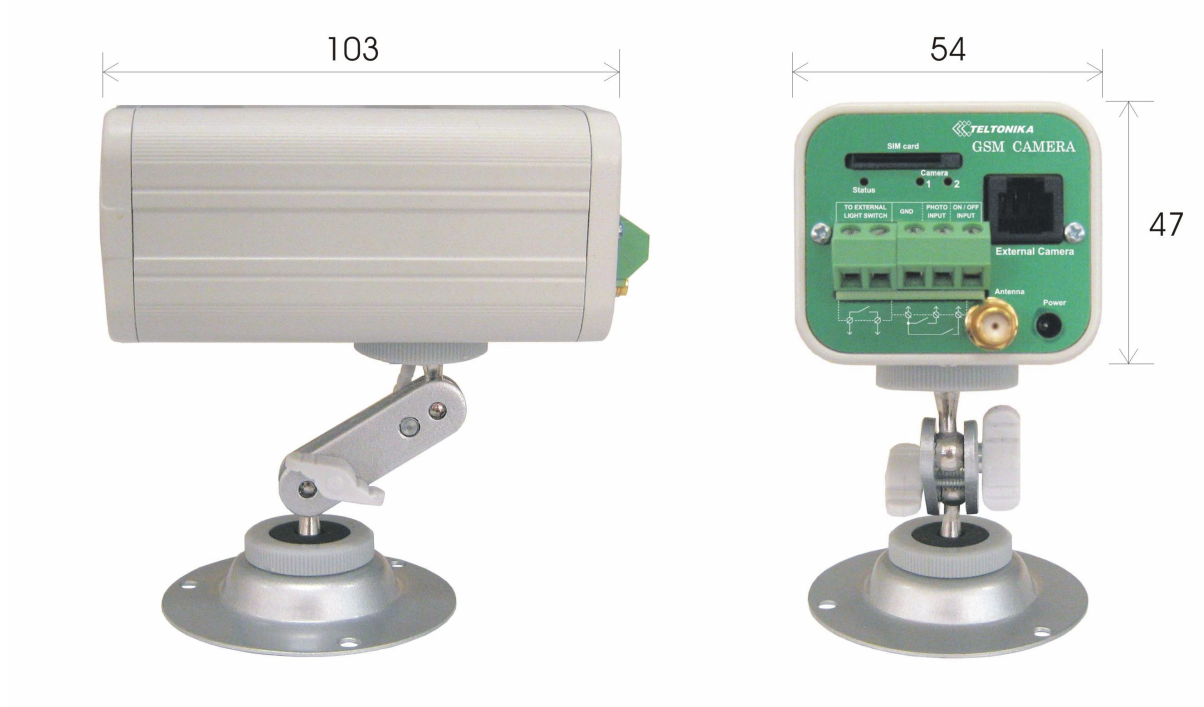
3.2 Data transfer

"Teltonika GSM Camera" device supports the following data bearers. Data type depends upon the GSM operator and data transfer capacities in the chosen GSM network:

- EDGE multi-slot Class 6 (3+1, 2+2) and mobile station Class B ,
- GPRS multi-slot Class 10 (4+1, 3+2) and mobile station Class B,
- SMS text/data messages.

3.3 Mechanical characteristics

"Teltonika GSM Camera" device case is made of metal. External device view and dimensions are given in the picture.



3.4 Electrical and operating characteristics

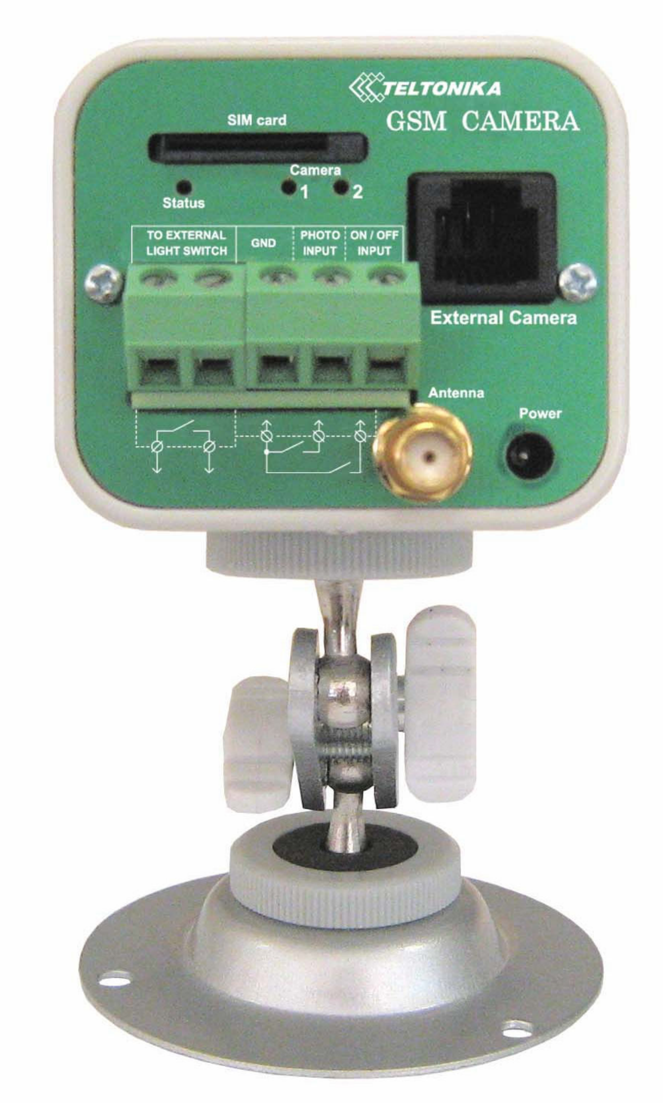
Parameter	Value
Power supply voltage	9-30 V
Maximal capacity	3 W
Marginal operating temperature	0 - +40C
External light controlling contacts	0-30V, 10A peak
Input control by voltage	Active level: < 0.8 V Inactive level: > 2 V
Input control by resistance	Active level: < 100 Om Inactive: > 10 kOm

4. How to Start?

4.1 Setting the device for work

Setting camera for work:

- Configure camera settings using computer or by SMS messages.
- Fix the mounting bracket and fasten camera to it.
- Focus camera lens gently if needed. (before focusing the lens make sure, that low sharpness is not the result of enlarged UV ray amount or radio frequency interference).
- Connect to the system:
  1. External GSM antenna.
  2. Insert the SIM card.
  3. External sensors.
  4. Power supply, plugged in to the power supply source.
  5. Additional external camera if needed.

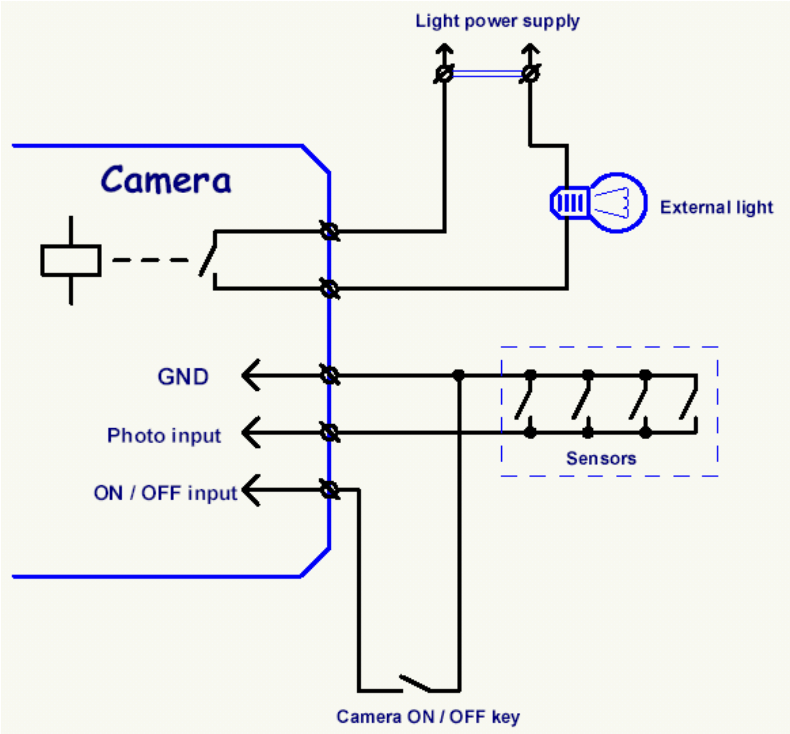


4.2 Sensors connection

Sensors and external light can be connected in four ways:

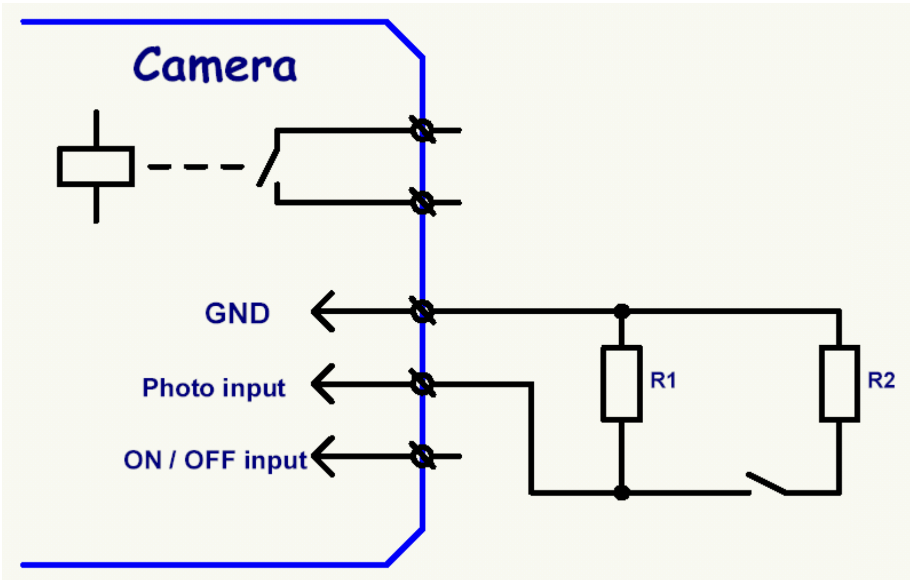
1.

- Sensors with contact outputs usually are connected together and directly connected to the system. Camera on/off key (with fixation) can be connected the same way.
- Low load light device control can be connected by using direct internal relay contacts. Higher voltage or load light devices must be connected using external high power relay.



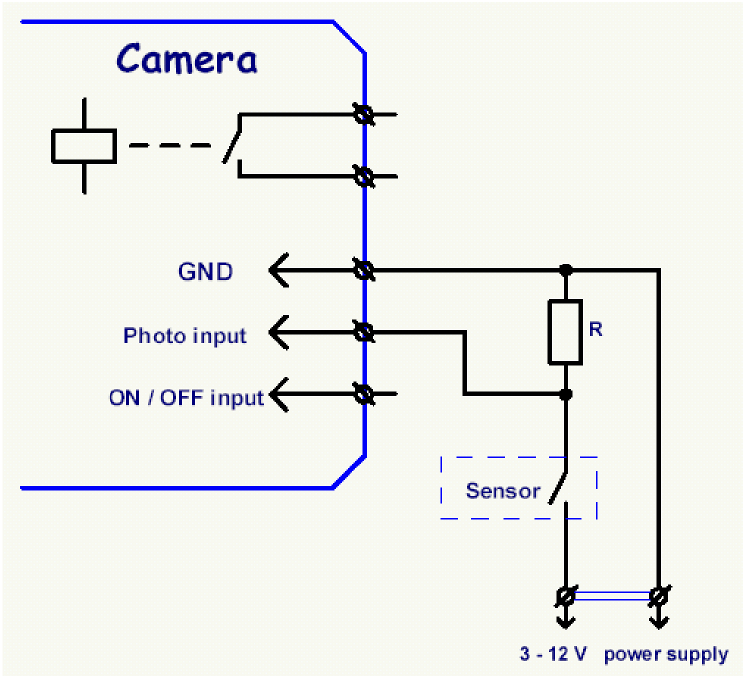
2.

- Camera input is inactive if the resistance (R1) between contacts is higher than 10 kOm. Camera input is active when resistance (R2) between contacts is lower than 100 Om.



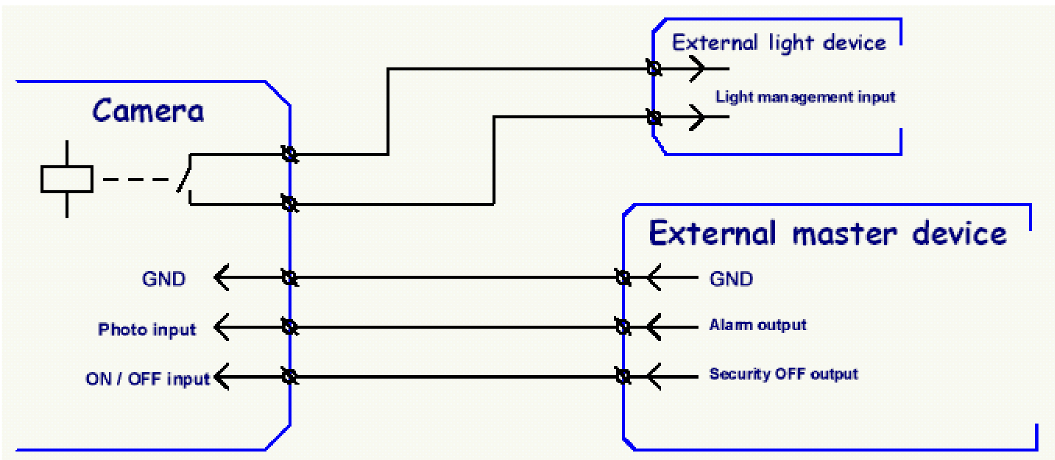
3.

- Sensor with running voltage can be connected. Operating status can be inverted by SMS commands or with Camera Configurator.



4.

- Camera can be controlled by the signals sent from the external device (e.g. security central). In this case active signal level has to be lower than 0.8 V, and inactive has to be not lower than 2 V. Active signal levels can be inverted by SMS commands or with Camera Configurator.
- Signal for external light device can be made using external light control contacts.

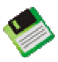


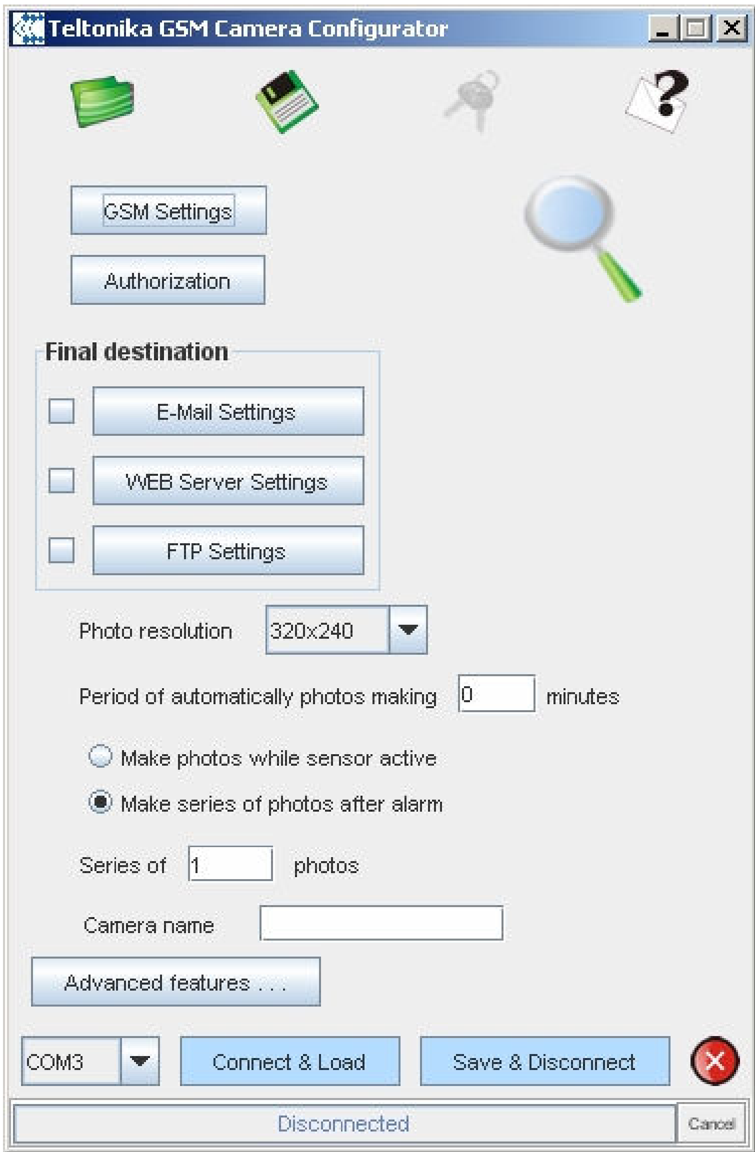
4.3 Connection to the PC

System configuration with PC:

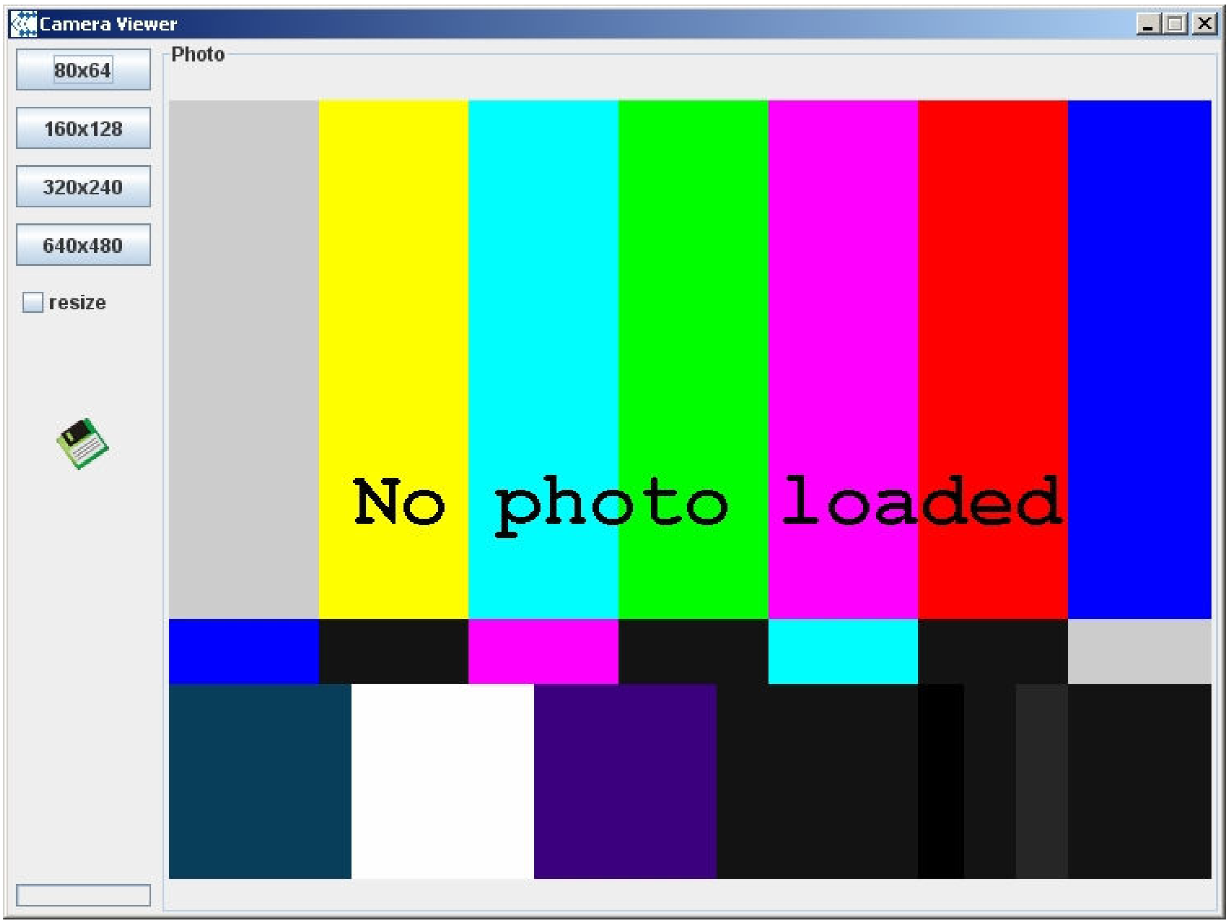
- Power supply has to be plugged in to the power supply source and connected to the camera.
- Camera and PC connected with linking cable.
- If SIM card with enabled PIN code request will be used, the card must be inserted into camera before plugging the power supply.
- Running Camera Configurator software.

4.4 Camera configuration with Camera Configurator software

1. Select COM Port number to which camera cable is connected.
2. Click "Connect & load" and wait until program will connect to the camera and read its settings.
3. If SIM card has enabled PIN code, click on  button and enter the PIN code. Code availability will be checked right after entering.
4. To load default settings or earlier saved settings, click on  button.
5.  button will save new configuration into the hard disk.
6.  button open/closes additional SMS commands automatically generating window. This option can be used if the user cannot connect camera to the PC. It is also possible to copy and paste the commands and send them through SMS sending program with GSM modem.
7. "Save & Disconnect" button will save the entered parameters and then will disconnect. Camera will restart in 30 seconds after unplugging cable from it.

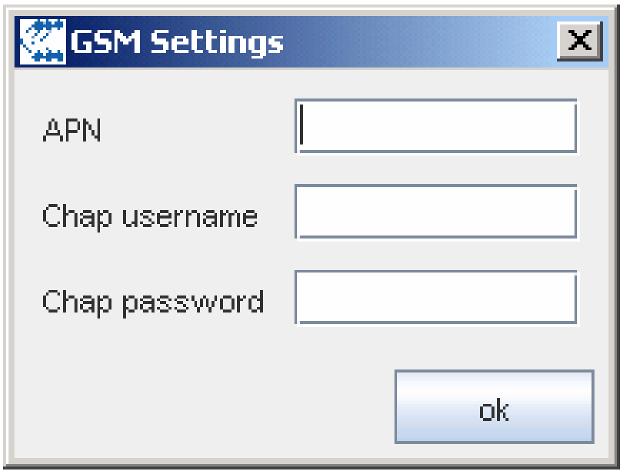


8.  button switches Camera Configurator to Viewer mode, in which it is possible to view pictures made by the camera.



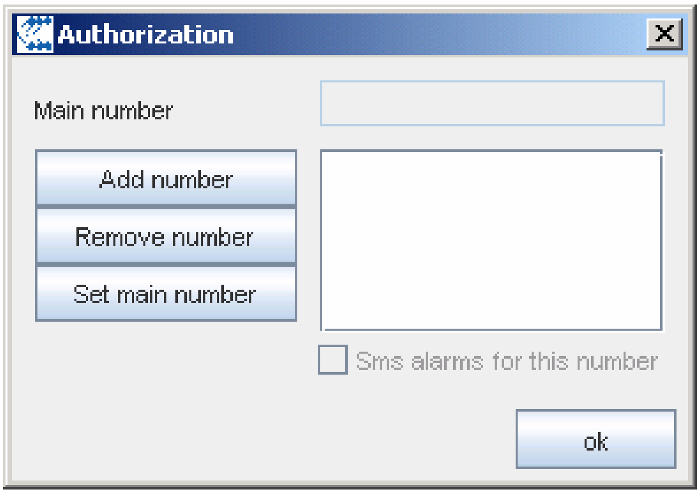
- In this mode you can press specified button to change picture format (resolution).
- "Resize" function can enlarge picture to full screen.
- Click  button to save picture to hard disk.
- Click on the picture to start/stop preview.

9. "GSM Settings" opens window with settings of GSM network provider.
    - "chap username" and "chap password" fields can be left blank if network does not require authorization.



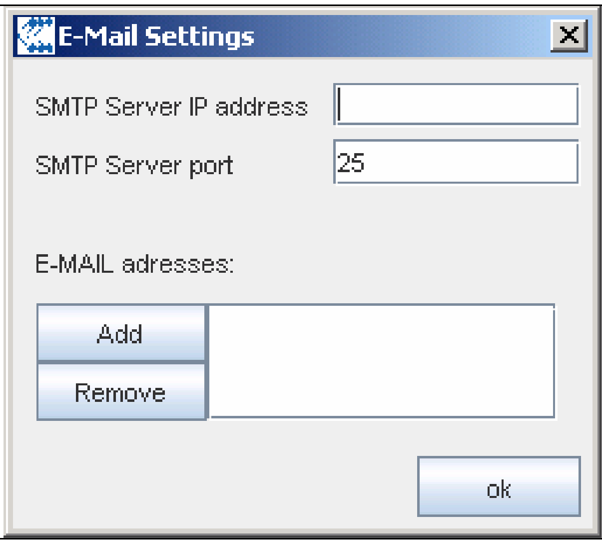
In order to send data via GSM GPRS/EDGE network, camera must have the access point address. "Chap username" and "Chap password" is not required in most of networks.

10. "Authorization" opens authorized users numbers window.
    - "ADD number" adds new number to the list.
    - "REMOVE number" removes selected number from the list.
    - "SET MAIN number" sets the selected number as main user number.
    - Tick the box at "SMS alarms for this number" to enable/disable alarm SMS sending to selected number.



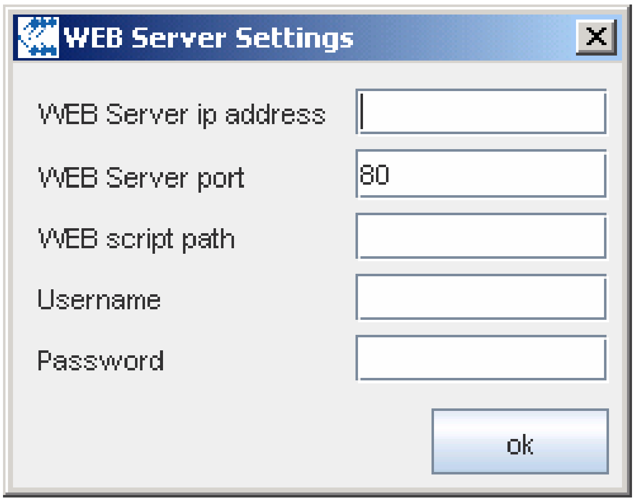
System performs commands sent from authorized numbers. To change or enter existing settings is allowed only from *main user* number. All other users can receive SMS messages about operations or start photo session.

11. "E-Mail Settings" opens SMTP server and e-mail box addresses window.
    - "ADD" adds new e-mail address to the list.
    - "REMOVE" removes selected e-mail address from the list.



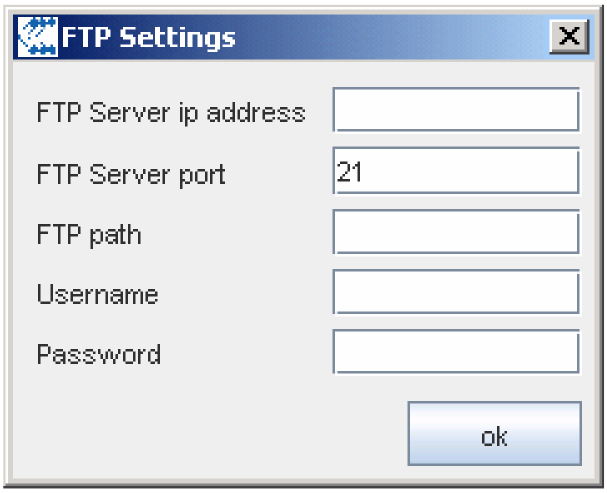
These parameters are set only if the pictures will be sent to e-mail address. SMTP server details must be provided from GSM network provider.

12. "Camera Server Settings" opens window for data sending to WEB server script or Observation Post software.
    - " WEB script path" sets the path from server adress to script. For Observation Post program the " WEB script patch" field must be left blank.
    - "username" and "password" fields can be left blank if server does not require authorization.



These parameters are set only if the pictures will be sent to server WEB script or to Observation Post software on the PC with static IP address.
WEB script must have a permission to save files on server's hard disc.
WEB server IP address and port must be provided by server system administrator.
Internet provider must inform about the external IP address and allowed port range. It is also possible to find out your IP address from one of public servers (e.g. www.ip-adress.com or www.ipinfo.info).

13. "FTP Settings" opens FTP server settings window.
    - "ftp path" sets the path from server address to picture saving directory.
    - "username" and "password" fields can be left blank if server does not require authorization.

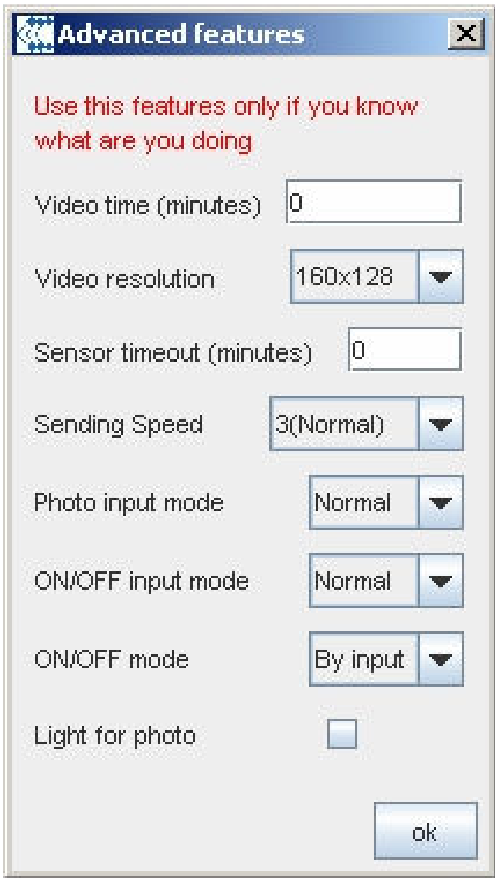


These parameters are set only if the pictures will be sent to FTP server.
Server must support access to it in "Passive mode".
FTP server details must be provided from server system administrator. If the server is public, details must be obtained from other sources.
Each picture's sending time to FTP server will take 7 seconds extra.

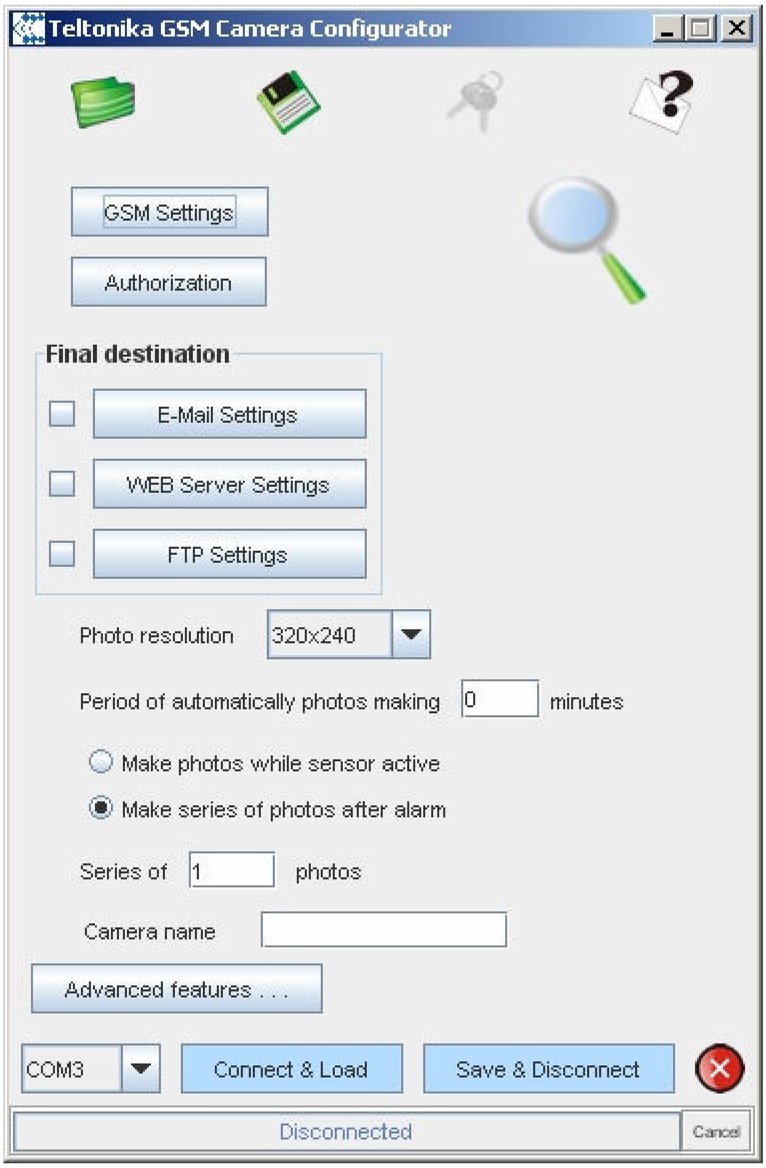
14. "Advanced features..." opens window with additional camera's settings.

Use these settings only if you know how this function works.

- "Video time" sets the time period (in minutes) for which camera switches to video mode.
- "Video resolution" sets video picture's quality in constant filming mode.
- "Sensors timeout" sets the timeout for the possible repeated reaction to sensor connected to input. Time is set in minutes and can be from **1** to **720** (up to 12 hours).
- "Sending Speed" sets the packet length sent through GSM GPRS/EDGE network. If received pictures are corrupted, length must be lessened. This is common in places where network is unstable.
- "Photo input mode" sets whether high and low sensors signal level (circuit short or open) is active on camera's PHOTO input. (NORMAL means that low level is active).
- "ON/OFF input mode" sets whether high or low sensors signal level (circuit short or open) is active on camera's ON/OFF input (NORMAL means that low level is active).



15. "Final destination" sets the pictures sending direction (e-mail, WEB server script, FTP server).
16. "Photo resolution" sets pictures resolution (quality) while filming in all modes except VIDEO.
17. "Period of automatically making photos" sets how often a picture must be made and sent. It works independently from other modes, however if during the period some other picture requests were made, period restarts. Only one picture is made independently from SERIES parameter. If external camera are connected, pictures will be sent from each of them.
18. "Make photos while sensor active" activates the mode where photos are made and sent as long as external sensor is active.
19. "After alarm make series of photo" sets the amount of pictures sent after alarm.
20. "Series of photo" sets the amount of pictures made and sent after sensors alarm, received command or short call to the camera. If external camera is connected, double amount of pictures will be sent because SERIES parameter counts the cycle amount of picture taking.
21. "Camera Name" entry includes part of picture name. Used to define pictures sent from several different cameras. If the field is left blank, IMEI number of the device will be used instead of name.



4.5 Camera control by SMS commands

Setting authorized numbers list

System performs commands sent from authorized numbers. Only *main user* can enter or change settings, add or remove additional users who can receive action SMS and order the video session. Into an empty numbers list, firstly must be added main user's number.

Command format	Default	Command functional description	Return messages
add	Empty	Adds main user's phone number. The number from which SMS message was sent is set. If number already exists, the returned answer contains all configured numbers. Main number can be changed by sending a RESET command from the number and then sending ADD command from the new number or it can be changed with Camera Configurator.	**main number set** – number added **Configured numbers: +xxxxxxxx +yyyxxxyyyx** – configured numbers are +xxxxxxxxx +yyyxxxyyyx **number not authorized** – command sent not from main number
add +*xxxxxxxxx*	Empty	Adds new phone number to authorized numbers list	**number +*xxxxxxxxx* added** – number added **illegal add parameters:[..........]** – illegal number parameters **number not authorized** – command sent not from main number
remove +*xxxxxxxxx*		Removes phone number from authorized numbers list	**number +*xxxxxxxxx* removed –** number removed from the list **can not remove main number** – main number cannot be removed from the list **illegal remove parameters:[........]** – illegal number **number not authorized** – command sent not from main number

Network settings

For data transfer through GSM GPRS/EDGE network, an access point address must be entered. "Chapuser" and "chappassword" are not required in most of networks.

Command format	Default	Command functional description	Return messages
apn **apn** *xxxxx* **apn clear**	Empty	Sets provider APN If command sent without any parameters, camera returns APN in use. Command CLEAR, clears set APN.	**apn set to xxxxx -** APN set **apn cleared** – APN cleared **apn xxxxx** – set APN is xxxxx **apn Not configured –** APN is not configured **illegal apn parameters:[..........]** – illegal APN parameters **number not authorized** – command sent not from main number
chapuser **chapuser** *xxxxx* **chapuser clear**	Empty	Sets mobile network provider user name (optional). If command sent without any parameters, camera returns chapuser name in use Command CLEAR clears set user name	**chapuser set –** chapuser name set **chapuser cleared** – chapuser name cleared **chapuser xxxxx** – chapuser name is xxxxx **chapuser Not configured –** chapuser name is not configured **illegal chapuser parameters:[..........]** – illegal chapuser name parameters **number not authorized** – command sent not from main number

chappassword **chappassword** *xxxxx* **chappassword clear**	Empty	Sets mobile network provider password (optional) If command sent without any parameters, camera returns password in use Command CLEAR clears set password	**chappassword set –** chappassword set **chappassword cleared** – chappassword cleared **chappassword xxxxx** – set chappassword is xxxxx **chappassword Not configured –** chappasword is not configured **illegal chappassword parameters:[..........]** – illegal chappasword parameters **number not authorized** – command sent not from main number

E-Mail settings

These parameters are set only if pictures will be sent to e-mail box. Mobile network provider must give SMTP server details.

Command format	Default	Command functional description	Return messages
smtpip **smtpip** *xxx.xxx.xxx.xxx:yyy*	Empty	Sets SMTP server address and port. Server name can be used (e.g. **example.smtp.org**) If command sent without parameters, camera returns address and port or server name and port number in use. By default SMTP server port is "**25**", if port is standard only address can be stated in command.	**smtp server ip set –** address set **smtpip xxx.xxx.xxx.xxx:yyy** – set ip address is **xxx.xxx.xxx.xxx:yyy** **smtpip Not configured –** address is not configured **illegal smtpip parameters:[..........]** – illegal smtpip parameters **number not authorized** – command sent not from main number

addemail **addemail** *xxx@yyy.dd*	Empty	Adds e-mail address to the list. where pictures will be sent If command sent without parameters, camera returns e-mail addresses in use	**email added** – e-mail added to the list **email already added** – e-mail already added **Configured emails: xxx@yyy.dd abc@zzz.xx** – configured e-mails are xxx@yyy.dd and abc@zzz.xx **illegal addemail parameters:[..........]** – illegal e-mail parameter **number not authorized** – command sent not from main number
removeemail *xxx@yyy.dd*		Removes e-mail from the list.	**email removed** – e-mail address removed from the list **can not remove email because its not added –** e-mail address is not in the list **illegal removeemail parameters:[..........]** – illegal e-mail parameters **number not authorized** – command sent not from main number

FTP server settings

These parameters are set only if pictures will be sent to FTP server. Server must be accessible in "Passive mode". Server system administrator has to give FTP server details. If the server is public, details can be obtained from other sources.

Command format	Default	Command functional description	Return messages
ftpip **ftpip** *xxx.xxx.xxx.xxx:yy*	Empty	Sets FTP server address and port. Server name can be used (e.g. **ftp.example.org**. do not set address ftp://ftp.example.org) If command sent without parameters, camera returns address and port in use. By default FTP server port is **"21"**, if port is standard command can contain only address.	**ftp server ip set –** server address set **ftpip xxx.xxx.xxx.xxx:yy** – set address is **xxx.xxx.xxx.xxx:yy** **ftpip Not configured –** address is not configured **illegal ftpip parameters:[..........]** – illegal FTP server parameters **number not authorized** – command sent not from main number
ftppath **ftppath** */aaaa/bbb/* **ftppath clear**	Empty	Sets path in FTP server to pictures saving directory If command sent without parameters, camera returns path in use CLEAR command clears the set path	**ftppath set –** path to directory added **ftppath cleared** – path is cleared **ftppath /aaaa/bbb/**– set path is**/aaaa/bbb/** **ftppath Not configured –** path is not configured **illegal ftppath parameters:[..........]** – illegal path parameters **number not authorized** – command sent not from main number

ftpuser **ftpuser** *xxxx* **ftpuser clear**	Empty	Sets FTP server user name If command sent without parameters, camera returns user name in use CLEAR command clears set user name	**ftpuser set** – user name set **ftpuser cleared** – user name cleared **ftpuser xxxxx** – set user name is xxxxx **ftpuser Not configured –** user name is not configured **illegal ftpuser parameters:[..........]** – illegal user name paramters **number not authorized** – command sent not from main number
ftppassword **ftppassword** *xxxxxxx* **ftppassword clear**	Empty	Sets FTP server user password If command sent without parameters, camera returns user password in use CLEAR command clears the set password	**ftppassword set** – user password set **ftppassword cleared** – user [password cleared **ftppassword xxxxx** – set password is xxxxx **ftppassword Not configured –** password is not configured **illegal ftppassword parameters:[..........]** – illegal password parameters **number not authorized** – command sent not from main number

WEB server settings

These parameters are used only if pictures will be sent to WEB server script or PC with static IP address and Observation Post software. WEB script must have permission from the server to put files into hard disc. Server system administrator must provide WEB server details. Internet provider must give external IP address and allowed port range of the PC. IP address can also be obtained in one of the public services (e.g. www.ip-adress.com or www.ipinfo.info).

Command format	Default	Command functional description	Return messages
webip **webip** *xxx.xxx.xxx.xxx:yyy*	Empty	Sets WEB server address and sending port. Server name can be used (e.g. **www.example.teltonika.com** or **example.teltonika.com**. Do not set the address http://example.teltonika.com) If command sent without parameters, camera returns adress in use By default WEB server port is **"80"**, if port is standard command may include only address.	**web server ip set** – address is set **webip xxx.xxx.xxx.xxx:yy** – set address is **xxx.xxx.xxx.xxx:yy** **webip Not configured –** address is not configured **illegal webip parameters:[..........]** - illegal WEB server address parameters **number not authorized** – command sent not from main number
webpath **webpath** */aaaa/bbb/script.php* **webpath clear**	Empty	Sets path in WEB server to pictures saving directory If command sent without parameters, camera returns path in use Command CLEAR clears the set path Leave the parameter blank if you use the Observation Post software	**webpath set** – path to directory set **webpath cleared** –path cleared **webpath /aaaa/bbb/script.php**– set path is **/aaaa/bbb/** **webpath Not configured –** path is not configured **illegal webpath parameters:[..........]** – illegal path parameters **number not authorized** – command sent not from main number

webuser **webuser** *xxxx* **webuser clear**	Empty	Sets WEB server user name (optional) If command sent without parameters, camera returns user name in use Command CLEAR clears the set user name	**webuser set –** user name set **webuser cleared** – user name cleared **webuser xxxxx** – set user name is xxxxx **webuser Not configured –** user name is not configured **illegal webuser parameters:[..........]** – illegal user name parameters **number not authorized** – command sent not from main number
webpassword **webpassword** *xxxxx* **webpassword clear**	Empty	Sets WEB server user password (optional) If command set without parameters, camera returns password in use Command CLEAR clears the set password	**webpassword set** – user password set **webpassword cleared** – user password cleared **webpassword xxxxx** – set password is xxxxx **webpassword Not configured –** password not configured **illegal webpassword parameters:[..........]** – illegal password format **number not authorized** – command sent not from main number

Sending settings

Camera may send pictures to e-mail box, FTP server and WEB server script (or Observation Post program). One or several sending directions can be set.

Sending sequence:

1. WEB server
2. E-mail
3. FTP server

Sending option to each destination can be turned on/off. Each picture's sending time to FTP server will take 7 seconds extra.

Command format	Default	Command functional description	Return messages
web <*on/off*>	OFF	**ON** – turns sending to WEB server script on **OFF** – turns sending to WEB server script off If command sent without parameters, camera returns current state	**send to web script <on/off>** - sending to WEB server script on/off **web <on/off>** - sending to WEB server script on/off **illegal web parameters:[..........]** – illegal WEB parameters **number not authorized** – command sent not from main number
email **email <*on/off*>**	OFF	**ON** – turn sending to e-mail box on. **OFF** – turn sending to e-mail box off. If command sent without parameters, camera returns current state	**send to email <on/off>** - sending to e-mail on/off **email<on/off>** - sending to e-mail on/off **illegal email parameters:[..........]** – illegal e-mail parameters **number not authorized** – command sent not from main number

ftp **ftp** <*on/off*>	OFF	**ON** – turns sending to FTP server on. **OFF** – turn sending to FTP server off. If command sent without parameters, camera returns the current state	**send to ftp <on/off>** - sending to FTP server on/off **ftp <on/off>** - sending to FTP server on/off **illegal ftp parameters:[..........]** – illegal FTP parameters **number not authorized** – command sent not from main number

Camera restart and reset commands

System can be restarted if it performs illegal actions caused by several received messages. Such thing is possible if request are received from several users at the same time.
System can always be returned to default position and using SMS commands reprogrammed again.

Command format	Default	Command functional description	Return messages
restart		Restarts the camera	**restarting –** restarting the camera **illegal restart parameters:[..........]** – illegal restart parameters **number not authorized** – command sent not from main number
reset **Use this settings only if you know how this function works.**		Deletes all information from camera, sets default configuration and restarts the camera.	**loading default configuration ....restarting –** request in progress **illegal reset parameters:[..........]** – illegal reset parameters **number not authorized** – command sent not from main number

Alarm settings

Each user sets alarm messages receiving individually by sending SMS message.

Command format	Default	Command functional description	Return messages
sms **sms <*on/off*>**	OFF	**ON** – turns warning SMS sending to authorized user on. **OFF** – turns warning SMS sending to authorized user off. If command without parameters sent, camera returns current state to sender.	**sms turned <on/off> -** sending warning SMS turned on/off **sms <on/off> -** sending warning SMS turned on/off **illegal sms parameters:[..........]** – illegal SMS parameters **number not authorized -** command sent from unauthorized number

Sensors settings

Camera starts automatically take pictures after receiving a signal from the sensor. This option can be enabled or disabled with SMS command, input button connected to camera or with external device signal. This can be used if you want to enter the area without sending warning SMS to users. This function is available for every authorized number. Depending on connected sensors type, the sensor, that system recognizes as active, can be inverted by SMS command. Camera can take set amount of pictures or as long as the sensor is active.

Command format	Default	Command functional description	Return messages
sensor *<normal/inverted>* Use this settings only if you know how this function works.	Normal	**NORMAL** – input is active when external contacts are closed, or voltage is lower than 0.8 V. **INVERTED** – input is active when external contacts are opened or voltage higher than 2 V.	**sensor set to <normal/inverted/onevent/continuous>-** sensor set to <> **sensor turned <on/off /byonoff > -** sensor turned <> **illegal sensor parameters:[..........]** – illegal sensor parameters **number not authorized** – command sent not from main number
sensor *<onevent/continuous>*	Onevent	**ONEVENT** – camera will make a number of pictures set in SERIES parameters. **CONTINUOUS** – camera will continue making pictures as long as sensor is active.	
sensor *<byonoff/on/off>*	BYONOFF	**ON** – forces camera's reaction to sensors disregarding ON/OFF input state **OFF** – turns camera's reaction to sensors off. **BYONOFF** – turns camera's reaction to sensors regarding to ON/OFF input state on.	
sensor		Command to find out the sensors status.	

onoffinput **onoffinput** *<normal/inverted>* Use this settings only if you know how this function works.	Normal	**NORMAL** – input is active when external contacts are closed, or voltage is lower than 0.8 V. **INVERTED** – input is active when external contacts are opened or voltage higher than 2 V. If command sent without parameters, camera returns current status.	**onoffinput set to <normal/inverted> -** onoffinput level set **onoffinput <normal/inverted> -** onoffinput level **illegal onoffinput parameters:[..........]** – illegal onoffinput parameters **number not authorized** – command sent not from main number

Camera status request

The status request returns the following report:

- Camera status
- Successfully/unsuccessfully sent images
- Configured and active sending places.

Command format	Default	Command functional description	Return messages
status		Send current camera status to authorized user. Reports include only configured sending points.	Status report e.g..: Photo input:(high/low) On/Off Input:(high/low) Servers:(No configured servers/(WEB:OK Email:OK Ftp:OK)) **illegal status parameters:[..........]** – illegal status parameters **number not authorized -** command sent from unauthorized number

Filming

To request pictures from camera, make a short call. The call cannot exceed 10 seconds. System will take this call as command "photo". If the call exceeds 10 seconds limit, system switches to listening mode. SMS commands allow:

- Set images format (quality);
- Send command for pictures taking (analogical to sensor operations);
- Set the period of time for making and sending pictures;
- Set the timeout for the possible repeated reaction to sensor connected to input. This can be useful while remotely babysitting a child when sensor periodically switches on. It also can be used with sensors that give several signals from one detection.
- Enter camera name. This entry includes a part of received picture name. Used to define pictures sent from several different cameras.
- Set external light switching mode

Command format	Default	Command functional description	Return messages
photo		Makes and sends the amount of images set in SERIES command.	**making requested photo –** making requested photos **already making photos –** photo taking is in action at the time of receiving command (e.g. sensor worked or previous photographing/video session is not yet completed) **illegal photo parameters:[.........] –** illegal photo parameters **number not authorized -** command sent from unauthorized number
photo *x*		Makes and sends the amount of images set in parameters.	**making requested photo –** making requested photos **already making photos –** photos are already making on the time the command is received (e.g. sensor was activated or previous photo/video session is still in progress) **illegal photo parameters:[.........] –** illegal photo parameters **number not authorized -** command sent from unauthorized number

format **format** *x*	3	Sets photos formats for all commands except VIDEO. Formats: **1** - 80x64 pixels **2** - 160x128 pixels **3** - 320x240 pixels **4** - 640x480 pixels If command sent without parameters, camera returns current status	**photo format set –** photo format set **format (1/2/3/4)** – set photo format is 80x64/160x128/320x240/640x480 **illegal format parameters:[..........]** – illegal format parameters **number not authorized** – command sent not from main number
series **series** *x*	1	Sets the amount of picture made after receiving the command **photo**, short call or sensor's activation. If command sent without parameters, camera returns current status	**series parameter set –** photo series set **series x –** set photo series is x **illegal series parameters:[..........]** – illegal series parameters **number not authorized** – command sent not from main number
period **period <***xxx/off***>**	OFF	Sets the period of filming. Period is set in minutes and can be from **1 to 1440** (up to 24 hours). Parameter **OFF** disables period of filming. When PERIOD mode is active, each time when additional filming is requested by other commands or camera was restarted, period starts counting from the beginning. If command sent without parameters, camera returns current status	**period set -** period filming function is set **period xxx/off -** set period is xxx or off **period turned off –** period filming function is turned off **illegal period parameters:[..........]** – illegal period parameters **number not authorized** – command sent not from main number

timeout **timeout <*xxx*/*off*>** **Use this settings only if you know how this function works.**	OFF	Sets timeout to the possible repeated reaction to sensor connected to photo input. Time is set in minutes and can be from **1** to **720** (up to 12 hours). Parameter **OFF** disables timeout If command sent without parameters, camera returns current status	**timeout set –** timeout on **timeout turned off –** timeout off **timeout xxx/off -** timeout xxx or off. **illegal timeout parameters:[..........]** – illegal timeout parameters **number not authorized** – command sent not from main number
name **name <.......>** **name clear**	Empty	Sets camera's name. If command sent without parameters, camera returns current name Command CLEAR clears the set camera's name	**name set –** name is set **name cleared –** name is cleared **name xxxxx –** set name is xxxxx **name Not configured –** name is not configured **illegal name parameters:[..........]** – illegal symbols used **number not authorized** – command sent not from main number
light **light <*on*/*off*>** **Use this settings only if you know how this function works.**	ON	Switch light function on/off for filming. If command sent without parameters, camera returns current state	**light set -** light function is set **light on/off -** set light function is on or off **illegal light parameters:[..........]** – illegal light parameters **number not authorized** – command sent not from main number

Video

There is an option to set cameras to constant video mode for a set time (up to 24 hours). Pictures resolutions (quality) are set with different command for this mode.
Note: During constant video, system does not react to any commands or sensors.

Command format	Default	Command functional description	Return messages
video *xxx* Use this settings only if you know how this function works.		Turns video for set time (in minutes) on. Maximum period is 1440 minutes (24 hours) If camera will be restarted before video time is up, the video time will start counting again.	**making video for xxx minutes –** making video for xxx minutes turned on **illegal video parameters:[..........]** – illegal video parameters **number not authorized -** command sent from unauthorized number.
videoformat **videoformat** *x*	2	Sets photos format for VIDEO command. Formats: **1** - 80x64 pixels **2** - 160x128 pixels **3** - 320x240 pixels **4** - 640x480 pixels If command sent without parameters, camera returns current status	**videoformat set** – video format set **videoformat (1/2/3/4)** – video format is 80x64/160x128/320x240/640x480 pixels **illegal videoformat parameters:[..........]** – illegal video format parameters **number not authorized** – command sent not from main number

Data packet length settings

Set the packet length sent through GSM GPRS/EDGE network. If received pictures are corrupted, length must be lessened. This is common in places where network is unstable.

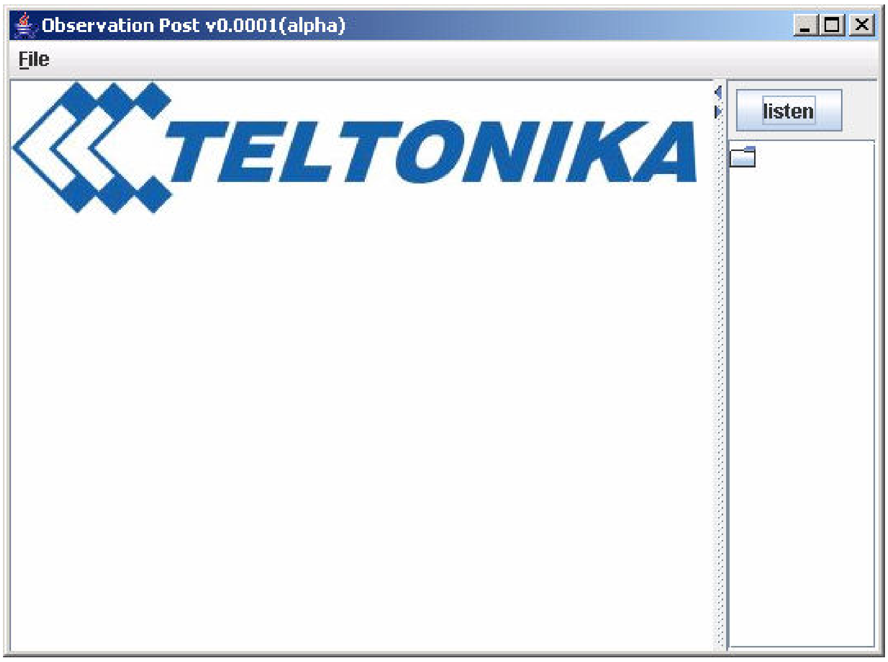
Command format	Default	Command functional description	Return messages
sendspeed **sendspeed** *x* Use this settings only if you know how this function works.	**3**	Sets data packet length From 1 to 10 **1** – lowest ... **3** – standard ... **6** – unlimited If command sent without parameters, camera returns current status	**sendspeed set-** send speed set **sendspeed <1/…/6> -** send speed set 1/…/6 **illegal sendspeed parameters:[……….]** – illegal parameters **number not authorized** – command sent not from main number

4.6 Observation Post Software

DEMO version of the program is described here. When newer version will appear, it will be placed in www.teltonika.com website.

Camera can send pictures to the PC with Internet access. The PC must have static IP address and at least one available port.

Internet provider must give an external IP address and allowed port range of the PC. IP address can also be obtained in one of the following public services (e.g. www.ip-adress.com or www.ipinfo.info).

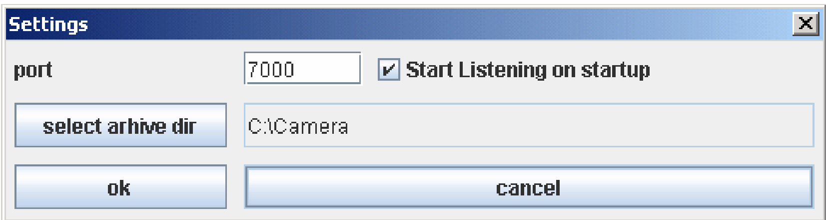


To send images from camera to program, the following things must be set in the program:

- Set IP address in "WEB server IP address"
- Set available port number of the PC in " WEB server port"

And in the computer:

- install Observation Post software
- set listening port number in the program. Go to FILE=>SETTINGS, set port number and tick "Start Listening on startup" to activate listening on the startup
- select directory for the pictures archive. Click "Select archive dir" button and select the directory
- click “OK” to save changes
- Click “Listen” button in main window to start port listening.



DEMO version of the program displays pictures and their directories that were received after running the program. All the rest pictures can be viewed in the directories where they are automatically archived.

5. Technical Support



This sign on the package means that it is necessary to read a User Manual, which is on the CD before you start using the device.



This sign on the package means, that used electronic and electric equipment should be stored separately.
.

If you have faced some problems using the device, which you are not able to solve by yourself, you are always welcome to address our technical support department by e-mail support@teltonika.lt. We will be glad to help you.